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FEDERAL COMMUNICATIONS COMMISSION
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Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
Requests to Open The 930-931 MHz Paging Reserve Band for Narrow-band Data or Paging Services	)	ET Docket No. 92-100
	)	
Petitions of	)	
	)	
Dial Page, Inc.	)	RM-7977
Mobile Telecommunication Technologies Corporation	)	RM-7978
PacTel Paging	)	RM-7979, 7960
PageMart, Inc.	)	RM-7980

TO: CHIEF ENGINEER, OFFICE OF ENGINEERING AND TECHNOLOGY

COMMENTS OF ARCH COMMUNICATIONS GROUP, INC.

Arch Communications Group, Inc. ("Arch") hereby submits its comments on the petitions of Dial Page, Inc. ("Dial Page"), Mobile Telecommunications Technologies Corporation ("MTel"), PacTel Paging ("PacTel"), and PageMart, Inc. ("PageMart") (collectively "Petitioners") for the allocation of 930-931 MHz for Advance Messaging Services ("AMS").[1/]

1/ Telocator, the trade association for personal communications, originally filed a Petition for Rulemaking (RM 7617) proposing that the Commission allocate 930-931 MHz for AMS. This band had been previously reserved for advanced one-way paging services. See Amendment of Parts 2 and 22 of the Commission's Rules to Allocate Spectrum in the 928-941 MHz Band and to Establish Other Rules, Policies, and Procedures for One-Way Paging Stations in the Domestic Public Land Mobile Radio Service, 89 FCC 2d 1337, 1342 (1982). Subsequently, the above-captioned petitions were filed requesting allocation of the reserved 930-931 MHz paging band for various advanced messaging proposals. Dial Page proposes an acknowledgement paging service that would complement

(continued...)

The Arch Communications Group, Inc. is a publicly held paging company that provides common carrier and private carrier paging services through five operating companies in thirteen states.[2/] The company considers one-way messaging to be the most efficient and cost-effective method of mobile communication and has devoted its attention to promoting this service.

Arch strongly supports the need to make the 930-931 MHz band immediately available for application by those wishing to offer the advanced one-way paging services for which it was reserved. The state of the paging art has indeed advanced to the point where a new, enhanced generation of paging services will be provided. And, the explosive growth of paging services, particularly wide area services, has created a critical need for spectrum. Given the ever increasing demand for one-way messaging which Arch has experienced, and the practical and technical limitations in providing two-way service on the 930-931 MHz, Arch urges the Commission to reserve 930-931 MHz for base to mobile one-way

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[1/](...continued)
conventional one-way paging. MTel proposes a two-way nationwide wireless network service that would permit high speed messaging and data communications. PacTel proposes a one-way advanced architecture paging service that would feature messaging and data communications. PacTel also proposes a one-way ground-air paging service that would complement air-ground telephone service. PageMart proposes a two-way personal information messaging service that would enable messaging and data communications.

[2/] The subsidiaries of Arch are Arch Capitol District, Inc., Arch Southeast Communications, Inc., Arch Michigan, Inc., Arch Connecticut Valley, Inc. and Hudson Valley Mobile Telephone, Inc.

messaging, and not two-way messaging or mobile to base messaging as some of the Petitioners have proposed.[3/]

The phenomenal growth of the one-way messaging market today is unparalleled in its history. By some estimates, the one-way messaging market is growing by 20 to 25 percent annually on a base of over 11 million units in service.[4/] The increased growth is being driven, in part, by the addition of new, non-traditional distribution channels for one-way messaging services, such as retail stores. In fact, the subscribers being added via these distribution channels are predominately subscribers who have never used a one-way messaging service before. By some industry estimates, the current penetration rate for one-way messaging services is approximately 5 percent and is anticipated to grow to 10 to 15 percent over the next 5 to 10 years.

One-way messaging service providers already are experiencing a shortage of frequencies in large metropolitan markets. Of the top 10 metropolitan statistical areas in the country, most either have no frequencies available or the last remaining frequency is

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[3/] Even though denominated as a one-way service, Dial Page's proposed service would be, for technical purposes, a two-way service because it requires mobile to base communications. Therefore, when Arch discusses the problems inherent with two-way services in the 930-931 MHz band, such discussion equally applies to one-way mobile to base services, such as Dial Page's acknowledgement paging.

[4/] Frost & Sullivan, Radio Paging Market, Summer 1990.

awaiting a lottery among applicants.[5] Market demand for service over a wide area -- sometimes as large as several states -- further complicates the frequency shortage faced by one-way messaging providers.[6] Unfortunately, solutions such as refarming of existing channels will probably do little to ease this congestion because most of the frequencies which can be refarmed will not be clear for reassignment over the wide areas demanded by the market.[7]

The need for new paging spectrum is particularly acute due to the changes in the nature of the paging market. Wide area service is in ever-increasing demand, and the geographic scope of the requested regions has been growing steadily. Existing allocations simply are not able to accommodate this demand, largely due to the difficulties in garnering a common frequency throughout an entire

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[5] For example, all remaining frequencies in Los Angeles, California, New York City, Washington, D.C., and Miami, Florida, are either tied up in litigation or are awaiting a lottery among several applicants. If a new operator wanted to enter any of these markets or an existing operator needed to expand capacity, there would be no frequency available.

[6] For instance, in order to effectively compete in markets such as the Northeast United States, a one-way message provider would need to offer service across the states of New York, Massachusetts, Pennsylvania, Washington, D.C., Virginia, New Jersey, Connecticut, Rhode Island, Delaware, New Hampshire, Vermont, and Maryland.

[7] Radio channels traditionally have been allocated on a local basis subject to co-channel separation or interference protection criteria. The result has been a patchwork of assignments in which different licensees operate in adjoining areas. Refarming a particular channel in one locale would not necessarily make it available in the adjoining locale for wide area paging purposes.

region in light of previous local assignments.[8/] The adoption of a regional licensing plan for 930-931 MHz spectrum is necessary.

Two-way services, such as those proposed by Dial Page, MTel, and PageMart in their petitions, would have great difficulty sharing an allocation with traditional one-way messaging services. A hallmark of one-way messaging services is the use of very high power transmitters located on mountain tops to cover very large areas.[9/] The noise level on adjacent channels from these transmitters is considerable. It is safe to assume, therefore, that to offer any two-way service or mobile to base service on a band with one-way services would require that either (1) the mobile device used for any two-way services be high power, or (2) the service provider would need to scatter an enormous number of receivers over the service area.[10/] Arch, therefore, believes that two-way or mobile to base messaging services would have great

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[8/] One result has been increased litigation as carriers in adjoining areas seek to expand on a common frequency to a new territory.

[9/] The Commission has recently authorized the use of 3,500 watt E.R.P. for 931 MHz common carrier one-way messaging in certain circumstances. See Section 22.502 of the Commission's Rules.

[10/] Arch believes that it will take perhaps as many as 20 to 30 times the number of receivers as transmitters to cover the same area. A typical wide area system, such as those used in the Northeast, uses over one hundred transmitters (many of which are located on mountain tops) to cover the service area. That equates to 2,000 to 3,000 receivers for two-way or mobile to base service. Furthermore, the infrastructure cost to connect that many receivers to a central site would be enormous causing the cost of the service to go up while driving demand for that service down.

difficulty in coexisting with one-way messaging services, and perhaps may even be an impossibility.[11/]

The 930-931 MHz band is located between two one-way messaging bands at 929-930 MHz and 931-932 MHz. The existing one-way messaging receivers are designed to operate over all three bands. Therefore, the cost to the subscriber for a one-way messaging unit on 930-931 MHz would not increase at all. In addition, the Commission could avoid wasting valuable spectrum by having to carve out guardbands on the edges of the allocation to prevent the leakage of adjacent channels' power from increasing the noise level on the mobile to base transmissions.[12/] Furthermore, the Commission need not allocate 930-931 MHz for two-way services because these services can and will be offered on other two-way

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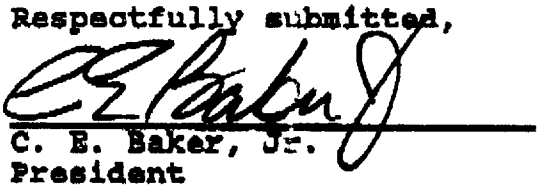
[11/] Another problem with sharing the 930-931 MHz band is that adjacent channels would not be synchronized with the mobile to base channel so that high power base stations on adjacent channels could be transmitting at the same time as the mobile transmitter. The 930-931 MHz band experiences -50 dbm of noise from adjacent bands, and intermodulation would create areas of noise spikes within the band. The Commission has traditionally separated high and low power transmissions by significant amounts of spectrum (typically over 5 MHz) because of the problems associated with high power transmitters eliminating the ability to receive low power transmissions in the same band. The 930-931 MHz band, located between the two high power bands at 931-932 MHz and 929-930 MHz, is not the band to try to accommodate low power transmitters. One possible solution to the interference problems would be to create guardbands around the mobile to base channels. However, depending on the amount of power used by the mobile transmitter and the sensitivity and selectivity of the receivers, the guardband might consume most or all of the allocation and still might not be enough.

[12/] See Footnote 11.

channels such as cellular or the Personal Communications Service allocations being proposed at 1.8-2.2 GHz.

Arch, therefore, respectfully requests that the Commission maintain the 930-931 MHz band for one-way service and expeditiously move forward with allocating 930-931 MHz for one-way advanced messaging services.

Respectfully submitted,



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Dated: June 1, 1992

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CERTIFICATE OF SERVICE

I, Lois L. Trader, hereby certify that a copy of the foregoing Comments of Arch Communications Group, Inc. has been sent by United States mail, first class and postage prepaid, to the following on the 1st day of June, 1992:

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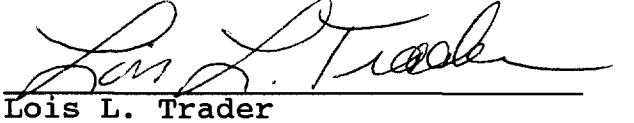

Lois L. Trader

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